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EXAMINER	
REESE, DAVID C	

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Please find below and/or attached an Office communication concerning this application or proceeding.

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte IL NAH

Appeal 2009-0789
Application 10/720,337
Technology Center 3600

Decided: [1] May 8, 2009

Before LINDA E. HORNER, STEVEN D.A. McCARTHY, and STEFAN STAICOVICI, *Administrative Patent Judges*.

HORNER, *Administrative Patent Judge*.

DECISION ON APPEAL

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[1] The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

STATEMENT OF THE CASE

Il Nah (Appellant) seeks our review under 35 U.S.C. § 134 of the Examiner's decision rejecting claims 1-24. We have jurisdiction under 35 U.S.C. § 6(b) (2002).

SUMMARY OF DECISION

We REVERSE and ENTER A NEW GROUND OF REJECTION PURSUANT TO OUR AUTHORITY UNDER 37 C.F.R. § 41.50(b).

THE INVENTION

The Appellant's claimed invention is an insert-nut for use with a car carrier that permits easy injection of plastic, resists rotational torque, and improves joint strength. Spec. 1:10-12. Claim 1, reproduced below, is representative of the subject matter on appeal.

> 1. An insert-nut for use with a carrier of a car, the insert-nut comprising
>
> a polygonal shape defined by a plurality of sidewalls and at least one circumferentially extending groove that is provided along a longitudinal dimension of the insert-nut,
>
> the plurality of sidewalls of the insert-nut being configured to provide a plurality of gaps between the sidewalls of the insert-nut and a surface of an installation hole of the carrier,
>
> the plurality of gaps extending circumferentially about a periphery of the insert-nut and along an entire length of the insert-nut,
>
> whereby plastic is injectable into the plurality of gaps and into the at least one groove to secure the insert-nut to the carrier.

THE REJECTIONS

The Examiner relies upon the following as evidence of unpatentability:

Kann	US 2,415,695	Feb. 11, 1947
Gauron	US 4,902,180	Feb. 20, 1990

The Appellant seeks our review of the Examiner's decision to reject claims 1-24 under 35 U.S.C. § 103(a) as unpatentable over Gauron and Kann.

ISSUES

The Examiner found that Gauron discloses the claimed insert nut having a plurality of sidewalls and a circumferentially extending groove. Ans. 3-4. The Examiner found that Gauron fails to disclose the insert nut having a polygonal shape. *Id.* The Examiner further found that Kann discloses an insert nut with a polygonal shape, and concluded that it would have been obvious to modify Gauron to have a polygonal shape as taught by Kann "in order to secure the nut against turning." Ans. 3-4.

Appellant contends there is no reason to combine Gauron with Kann because Kann teaches securing by riveting and Gauron teaches securing by resin. App. Br. 5-8; Reply Br. 2-3.

The issue before us is:

Has Appellant shown that the Examiner erred in the rejection of claims 1-24 because there is no reason to combine Gauron with Kann?

FINDINGS OF FACT

We find that the following enumerated facts are supported by at least a preponderance of the evidence. *Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1427 (Fed. Cir. 1988) (explaining the general evidentiary standard for proceedings before the Office).

1. Kann discloses a clinch nut (insert-nut) that includes a cylindrical body portion 10 with female threads 13 within central bore 12, and an extending portion 11, shaped as a prism in the form of a hexagon, located on top of cylindrical body portion 10. Kann, col. 2, ll. 46-50, 52-54; Fig. 1.
2. The widest cross section of portion 11 (the distance between opposing corners) is slightly smaller than the diameter of the hole of plate 14 the clinch nut is designed to be inserted into. Kann, col. 2. l. 52 to col. 3, l. 2.
3. Kann's clinch nut is installed by inserting portion 11 into a hole in a plate 14, and a wedge-like joint is created by riveting portion 11 so that the edges expand and bend into the material of the plate 14, forming a head with a shape similar to a truncated pyramid with a polygonal base and slightly concave sides. Kann, col. 3, ll. 7- 17, 31-47; Figs, 1-3.
4. Kann discloses that after riveting, the concave sides of portion 11 improve the grip between the insert nut and the plate. Kann, col. 3, ll. 38-42.
5. Kann makes no disclosure regarding filling the gaps between the clinch nut and the plate 14. Kann, *passim*.
6. Kann's clinch nut resists turning because riveting forces the

edges of polygonal cross section portion 11 to grip the material on the top of the plate 14. Kann, col. 3, ll. 11-17, 31-42.

7. Gauron discloses a fastener (fastener element 70) for a sandwich panel. Gauron's fastener 70 is molded-in (secured in) a cavity 24 in a panel 12 by filling the cavity with resin 68 that bonds to the skin 14, 16 and the core material 18 of the panel. Gauron, col. 1, ll. 10-14; col. 5, ll. 26-33; Fig 17.
8. It is uncontested that Gauron does not teach or suggest a polygonal cross section along the length of the fastener. Ans. 4; App. Br. 6.
9. Gauron' fastener is not disclosed as riveted to the sandwich panel. Gauron, *passim*.

PRINCIPLES OF LAW

Appellant's Burden

Appellant has the burden on appeal to the Board to demonstrate error in the Examiner's position. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) ("On appeal to the Board, an applicant can overcome a rejection [under § 103] by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.") (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)).

Obvious to Try

"When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill in the art has good reason to pursue the known options within

his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. In that instance the fact that a combination was obvious to try might show that it was obvious under § 103." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007).

ANALYSIS

Independent claims 1 and 8 include the limitations that the insert-nut has a polygonal shape along its entire length, creating a plurality of gaps between the sidewalls of the insert-nut and the surface of the installation hole of a carrier, and that plastic may be injected into the gaps to secure the insert-nut.

Kann discloses an insert nut with a polygonal cross section along only the top portion that when riveted to the plate improves the grip of the nut against the plate (Fact 6). Gauron discloses a fastener (insert nut), that does not have a polygonal shape, and is not secured by riveting, but rather is molded-in by being filled with resin (Facts 7-9). We agree with Appellant that a person of ordinary skill in the art, at the time of Appellant's claimed invention, would have no reason to combine Kann's teaching that a polygonal cross section improves a fastener's grip on a plate once riveted in place with Gauron's fastener that is not riveted. Appellant has rebutted the Examiner's conclusion of obviousness for claims 1 and 8. We also reverse the Examiner's decision to reject claims 2-7 and 9-24 by virtue of their dependence from claims 1 and 8.

NEW GROUND OF REJECTION

We enter a new ground of rejection of claims 1-24 under 35 U.S.C. § 103(a) as unpatentable over Gauron.

ADDITIONAL FINDINGS OF FACT

10. Gauron discloses a prior art fastener (fastener element 10) with a generally spool-shaped configuration that includes a disk at each end of a stem (34). The disks include outer end portion 32 and inner end portion 36 with diameters substantially equal to the diameter of the installation opening (22). Stem (34) has a diameter substantially smaller than the disks. Gauron, col. 4, ll. 4-10; col. 5, ll. 13-15; Figs 4, 5.
11. Inner end portion 36 is a circular rib around stem 34 that has two anti-rotational flats (38, 40) on diametrically opposite sides. Gauron, col. 4, ll. 9-12.
12. Outer end portion 32 has a fill opening (46) and a vent opening (48). Gauron, col. 4, ll. 15-18.
13. The prior art fastener is installed by injecting epoxy (68) into the fill opening (46) until the installer sees epoxy at the vent opening (48). Gauron, col. 4, ll. 42-45, 60-62 (*see* further details of installation at col. 4, ll. 19-68).
14. Gauron discloses the prior art fastener often had voids or air spaces in the resin, weakening the connection. Gauron, col. 1, ll. 37-40.
15. Gauron discloses an improved fastener (70) with a shape defined by a plurality of sidewalls with substantially the same diameter

(end portion 72 with gaps 94 and 96, and inner end portion 74 and circular ribs 80, 82 with flats 78, 79, 90, 92, 93, 95). Gauron, col. 5, l. 57 to col. 6, l. 4; col. 8, ll. 22-26 (regarding diameter); Figs. 13-15.

16. The antirotation flats (78, 79, 90, 92, 93, 95) of inner end portion (74) and circular ribs (80, 82) are aligned with each other and with the gaps (openings 94, 96) of end portion (72). Each set of aligned flats and gaps is on a diametrically opposed side of the fastener. Gauron, col. 5, ll. 60-61, col. 6, ll. 1-10; Figs. 13-16.
17. Gauron's fastener has a plurality of circumferentially extending grooves (girth grooves 84, 86, 88) provided along a longitudinal dimension of the insert nut. Gauron, col. 5, l. 66 to col. 6, l. 4; Figs. 13-15.
18. The plurality of sidewalls of the insert-nut provide a plurality of gaps between the sidewalls of the insert-nut and a surface of an installation hole (cavity 24) of the carrier, and the plurality of gaps extend circumferentially about a periphery of the insert-nut and along an entire length of the insert-nut (fastener 70). Gauron, Figs. 13-17 (*see* in particular gaps in cavity 24 filled by resin 68 in Fig. 17).
19. Plastic is injectable into the plurality of gaps and into the at least one groove to secure the insert-nut to the carrier. Gauron, col. 6, ll. 21-41; Fig 17
20. Gauron does not disclose the sidewalls comprising a polygonal shape. Gauron, *passim*.
21. Gauron discloses improved fastener 70 has three sets of

antirotation flats instead of the one set of the prior art. The additional flats improve resistance to rotation. The improved fastener provides control of the flow of resin when the fastener is installed to reduce voids and strengthen the bond of the fastener to the panel. Gauron, col. 5, ll. 36-39; col. 5, l. 66 to col. 6, l. 4; col. 6, ll. 42-68; Figs. 15, 16.

22. Gauron discloses the longitudinal dimension of fastener (70) corresponds to the thickness of the panel. Gauron, Fig 17.
23. Gauron discloses end portion 72 is snugly received in the opening. Gauron, col. 8, ll. 9-10; Fig. 17.
24. Gauron depicts fastener 70 fitting into the installation hole (24). Fig. 17.
25. Gauron's fastener is sized to be substantially inscribed in the installation hole. Facts 15, 23, 24.
26. Appellant discloses that a problem with the prior art is voids in the resin between the insert nut (20) and the installation hole of the carrier (10), lowering joint strength and resistance to rotation. Spec. 3:3-5.

ANALYSIS

Claims 1-3, 5, 7-10, 12, 14, 15, 17, 18, and 20-24

Gauron discloses the claimed device except for the polygonal shape of the sidewalls (Facts 15-20). More specifically, Gauron's fastener has sidewalls with diametrically opposed flat portions (inner end portion 74 and circular ribs 80, 82 with flats 78, 79, 90, 92, 93, 95) and the top disk (end portion 72) has gaps (openings 94, 96) that align with the remaining flats (Fact 16).

Gauron discloses that prior art insert nuts were similar to Gauron's fastener, except that the each of the prior art fasteners had a stem with a single circular rib with a set of flats (Facts 10-13). Gauron's fastener added additional circular ribs with flats to improve resistance to turning (Fact 21). Gauron teaches that adding additional ribs with flats also improved resin flow, helping to reduce voids in the adhesive and strengthen the bond of the fastener to the panel (Fact 14).

A person of ordinary skill in the art, at the time of Appellant's invention, would have known from the disclosure of Gauron that adding flats through the addition of ribs improved resistance to rotation in a fastener strongly bonded with the surrounding cavity by a substantially void-free plastic potting. The design need to improve resistance to rotation while overcoming voids in the resin would have provided a person of ordinary skill in the art reason to add at least one additional flat to each of the ribs of Gauron (inner end portion 74 and circular ribs 80, 82). For example, adding an additional pair of diametrically-opposed flats to the circular ribs 90° from the existing flats would have created a square or rectangular polygon.

Further, the same design need would have motivated a person of ordinary skill to change outer end portion 32 into a polygon shape as well. This change would create a fastener with a polygonal shape and uniform gaps along the entire length. The gaps in the outer end portion provide an inlet for injection, and the gaps are defined by adjacent vertices of the polygonal shape and the segment of the installation hole between adjacent vertices. Modification of Gauron's device to Appellant's claimed device is then the product of ordinary skill and common sense, and not innovation. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007).

Providing ribs having pentagonal and hexagonal shapes would have been further predictable solutions that might have been chosen from a finite number of options. Only a finite number of additional flats can be added to the ribs of Gauron to provide a predictable solution to the problem. Adding significantly more than six flats to each rib would have rendered the ribs' profiles too nearly circular to achieve the desired advantages.

Claims 4 and 11

Gauron discloses the longitudinal dimension of the insert-nut corresponds to the panel (carrier) (Fact 22).

Claims 6, 13

A person of ordinary skill in the art would have known making the circular ribs into a polygonal shape improves resistance to rotation. Changing the grooves in the stem from circular to polygonal would have provided the same advantage, and also would have been an obvious modification.

Claims 16, 19

Gauron discloses the fastener (insert-nut) is sized to be substantially inscribed in the installation hole (Fact 25).

CONCLUSION

Appellant has shown that the Examiner erred in the rejection of claims 1-24 because one having ordinary skill in the art would not have been led to combine Gauron with Kann in the manner claimed.

We conclude that the subject matter of claims 1-24 would have been obvious to a person of ordinary skill in the art at the time of the claimed invention in view of Gauron and enter a new ground of rejection.

DECISION

We reverse the Examiner's decision to reject claims 1-24. Pursuant to 37 C.F.R. § 41.50(b), we enter new ground of rejection under 35 U.S.C. § 103(a) of claims 1-24 as unpatentable over Gauron.

Under 37 C.F.R. § 41.50(b) a new ground of rejection has been entered. 37 C.F.R. § 41.50(b) provides that, "[A] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review."

Regarding the new ground of rejection, Appellant must, *WITHIN TWO MONTHS FROM THE DATE OF THE DECISION*,[2] exercise one of the following options with respect to the new ground of rejection, in order to avoid termination of the appeal as to the rejected claims:

> (1) *Reopen prosecution*. Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the proceeding will be remanded to the examiner. . . ; or
>
> (2) *Request rehearing*. Request that the proceeding be reheard under § 41.52 by the Board upon the same record. . . .

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

REVERSED; 37 C.F.R. § 41.50(b)

vsh

[2] The date of the decision is the Decided date shown on the cover page of this Decision and is not the Mail Date (paper delivery) or Notification Date (electronic delivery).

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